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Quantum folding

A classical result in Lie theory stipulates that a simple finite dimensional Lie algebra of type BCFG can be constructed as the subalgebra of a Lie algebra of type ADE fixed by an admissible diagram automorphism of the latter. This construction is called folding and extends to Kac-Moody Lie algebras. Although foldings do not admit direct quantum analogues, it can be shown that there exists an embedding of crystals for the corresponding Langlands dual Lie algebras. The aim of this talk is to introduce algebraic analogues and generalizations of foldings in the quantum setting which yield new flat families of deformations of universal enveloping algebras of non-semisimple Lie algebras and of Poisson algebras. The most spectacular example is a new "quantum matrices" algebra (joint work with A. Berenstein)